

9799

No. 0000107

**WW Engineering & Science, Inc.**

5555 Glenwood Hills Parkway SE • P.O. Box 874 • Grand Rapids, Michigan 49588-0874 • PH(616)942-9600 FX(616)942-6499



May 7, 1990

Mr. Fred Bartman
U.S. Environmental Protection Agency
230 S. Dearborn Street (5HS-11)
Chicago, IL 60604

RE: SKINNER LANDFILL, WEST CHESTER, OHIO

Dear Fred:

WWES has developed a set of recommended criteria for selecting the residential wells most appropriate for sampling on the Skinner Landfill project. These criteria include:

1. Close proximity to the landfill.
2. Well log record available.
3. Positioning downgradient from the landfill.
4. Completed below the ground water elevation measured along the site perimeter (in the creek valleys).

WWES has reviewed the residential well logs supplied by the Ohio Department of Natural Resources, Division of Water, and have isolated eleven off-site residential wells for sampling. The locations of these wells are shown on the attached map and the well logs are included as Attachment 1. A summary of the estimated elevations of well completions is shown in Table 1. These wells meet the recommended selection criteria listed above.

WWES has completed the installation and development of all Phase II monitoring wells at the Skinner site. A preliminary top-of-casing elevation survey has been conducted by WWES field staff and several rounds of water level measurements have been made. Table 2 summarizes the most recent water level measurements. The resulting ground water elevations in the creek valleys along the perimeter of the site provide a minimum depth (elevation) of completion for nearby residential wells to be targeted for sampling (approximately 695 feet USGS).

Fred Bartman
May 7, 1990
Page 2

The prevailing ground water flow direction has not been determined conclusively due to complications resulting from the discontinuous nature of water bearing units beneath the site. Additional analyses of the lateral relationships and hydraulic conditions of the bedrock will be necessary prior to determining, more accurately, the ground water flow characteristics. It is assumed, however, given the prevailing flow direction of the streams in the area, that ground water flow in the bedrock is toward the southwest.

In light of the schedule restraints on the residential well sampling program the "minimum completion depths" established from the newly constructed bedrock monitor wells were used to select the residential wells in conjunction with the assumed ground water flow direction in the bedrock.

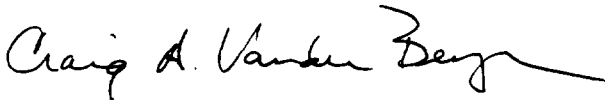
In addition to the residential wells listed that meet the proposed selection criteria, three wells located on the landfill property are proposed to be sampled. Although no documentation of their construction is available, the potential for contamination is high and WWES recommends that ground water from these wells be analyzed.

It is our impression that the Ohio EPA will be actively involved in choosing and gaining permission/access to the residential wells that will be sampled. I will contact Ms. Bonnie Bowker of the OEPA and coordinate this task with her. This work is scheduled to begin May 28, 1990.

If you would like to discuss this subject in greater detail you may contact me at (616) 942-9600.

Sincerely,

WW ENGINEERING & SCIENCE



Craig A. VandenBerge
Associate Project Manager

cc: Bonnie Bowker, OEPA
04003, 32

TABLE 1 RECOMMENDED RESIDENTIAL WELLS			
Residential Well No. (from ODNR map)	Approximate Ground Level Elevation	Approximate Completion Depth (Elevation USGS)	Lithologic Unit
25	710	645	shale
26	645	570	sand & gravel
27	640	590	sand & gravel
34	775	671	limestone
35	630	578	sandstone(?)
36	680	530	shale/limestone
37	680	590	shale
38	670	620	gravel
39	640	581	clay
45	780	705	"rock"
46	725	667	shale
47	725	625	shale
48	645	611	sandstone(?)

TABLE 2 SUMMARY OF RECENT ON-SITE WATER LEVELS						
GW well #	TOC Elevation	Total Depth	Top of Screen	Bottom of Screen	Screen Length	Ground Water Elevation
24	696.13	23	678.1	673.1	5	678.56
26	699.33	39	665.3	660.3	5	669.775
27	737.01	67.5	674.5	669.5	5	669.865
28	688.25	28	665.2	660.2	5	672.3
29	722.06	28.8	698.3	693.3	5	695.54
30	678.58	26	657.6	652.6	5	667.635
31	677.54	16.8	665.7	660.7	5	665.865
32	672.96	44.1	633.9	628.9	5	667.38
33	672.68	16.8	660.9	655.9	5	667.85
35	671.95	41.9	635	630	5	667.5
36	671.8	13	663.8	658.8	5	666.96
38	684.51	48	641.5	636.5	5	668.765

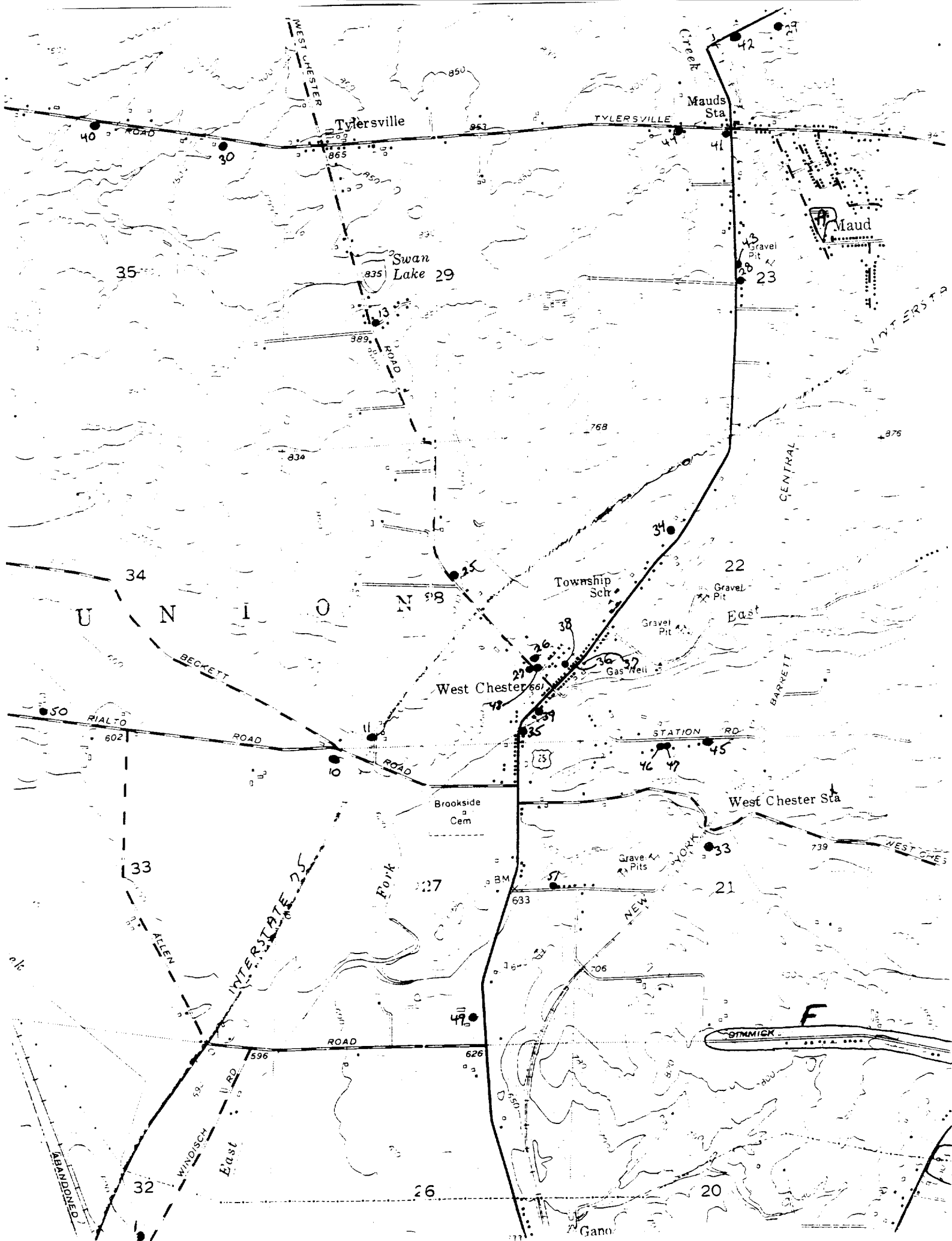
Elevations referenced to USGS datum

ATTACHMENT 1

Residential Well Logs

and

Location Map



WELL LOG AND DRILLING REPORT

ORIGINAL

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
1500 Dublin Road
Columbus, Ohio

No. 189856

25

County BUTLER Township Union Section of Township _____
Owner Roger D. Mantley Address 149 Church St. (St. Bernard's Ohio)
Location of property West Chester + Leosandville Rd. 1/2 mile West of Route 25

CONSTRUCTION DETAILS

BAILING OR PUMPING TEST

Casing diameter 6" Length of casing 40
Type of screen _____ Length of screen _____
Type of pump _____
Capacity of pump _____
Depth of pump setting _____
Date of completion 5/11/57

Pumping rate _____ G.P.M. Duration of test _____ hrs.
Drawdown _____ ft. Date _____
Developed capacity _____
Static level—depth to water _____ ft.
Pump installed by _____

WELL LOG

SKETCH SHOWING LOCATION

Formations Sandstone, shale, limestone, gravel and clay	From	To
<u>CLAY</u>	<u>0 Feet</u>	<u>7 Ft.</u>
<u>SHALE</u>	<u>7</u>	<u>65</u>
<u>Water at 37'</u>		

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.

N.

Well
W. W. Chester + Leosandville

E.

S.

See reverse side for instructions

Drilling Firm Valley Well Driller Date 5/13/57
Address R. R. #1 West Chester, O. Signed L. Lloyd Franklin

25
LOCATED

WF' L LOG AND DRILLING REPORT

ORIGINAL

26

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
1500 Dublin Road
Columbus, Ohio

No. 189864

County BUTLER Township UNION Section of Township _____
Owner Cecil FABER Address W. Chester + Re Soundsville
Location of property West Chester

CONSTRUCTION DETAILS			BAILING OR PUMPING TEST	
Casing diameter <u>6"</u>	Length of casing <u>65'</u>		Pumping rate.....G.P.M.	Duration of test.....hrs.
Type of screen.....	Length of screen.....		Drawdown.....ft.	Date.....
Type of pump.....			Developed capacity.....	
Capacity of pump.....			Static level—depth to water.....ft.	
Depth of pump setting.....			Pump installed by.....	
Date of completion <u>8/6/57</u>				
WELL LOG			SKETCH SHOWING LOCATION	
Formations Sandstone, shale, limestone, gravel and clay	From	To	Locate in reference to numbered State Highways, St. Intersections, County roads, etc.	
<u>TOP SOIL</u>	<u>0 Feet</u>	<u>7 Ft.</u>	<div style="text-align: center;"> <p>N.</p> <p>W. Chester + Re Soundsville</p> <p>U.S.</p> <p>S.</p> </div>	
<u>SAND + SHAUCL</u>	<u>7'</u>	<u>75'</u>		
<u>Water @ 55'</u>				
			See reverse side for instructions	

Drilling Firm "VALLEY" Well Driller Date 8/6/57
Address R R #1 West Chester, O. Signed Lloyd F. Miller

26
LOCATED

WELL LOG AND DRILLING REPORT

ORIGINAL

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Columbus, Ohio

Nº 147507

County Butler Township Union Section of Township
or Lot Number
Owner James Riesenberg Address West Chester, Ohio
Location of property 8905 W. Chester & Leasandville rd.

CONSTRUCTION DETAILS

Casing diameter 6" Length of casing 50 ft
Type of screen Length of screen
Type of pump
Capacity of pump
Depth of pump setting

PUMPING TEST

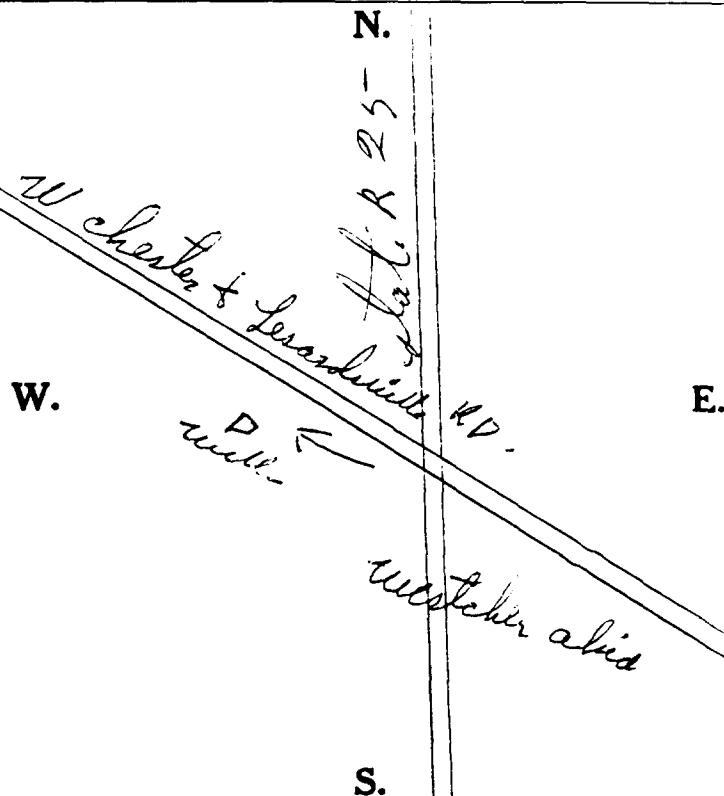
Pumping rate G.P.M. Duration of test 600 hrs.
Drawdown ft. Date June 3, 1966
Developed capacity
Static level—depth to water ft.
Pump installed by

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
	0 Feet	<u>50</u> Ft.
<u>sandy clay</u>	<u>0</u>	<u>46</u>
<u>sand & gravel</u>	<u>46</u>	<u>50</u>

SKETCH SHOWING LOCATION

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm Vanderpool
Address Ham - Ohio

Date June 3, 1966
Signed Herbert Vanderpool



WELL LOG AND DRILLING REPORT

ORIGINAL

43 34

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Columbus, Ohio

No 110162

County BUTLER Township UNION Section of Township or Lot Number 28

Owner RUSSELL KLINE Address WEST CHESTER OHIO

Location of property ON STATE RT 25 IN WEST CHESTER

CONSTRUCTION DETAILS

Casing diameter 6 1/4" Length of casing 36' 9"
Type of screen..... Length of screen.....
Type of pump.....
Capacity of pump.....
Depth of pump setting.....

PUMPING TEST

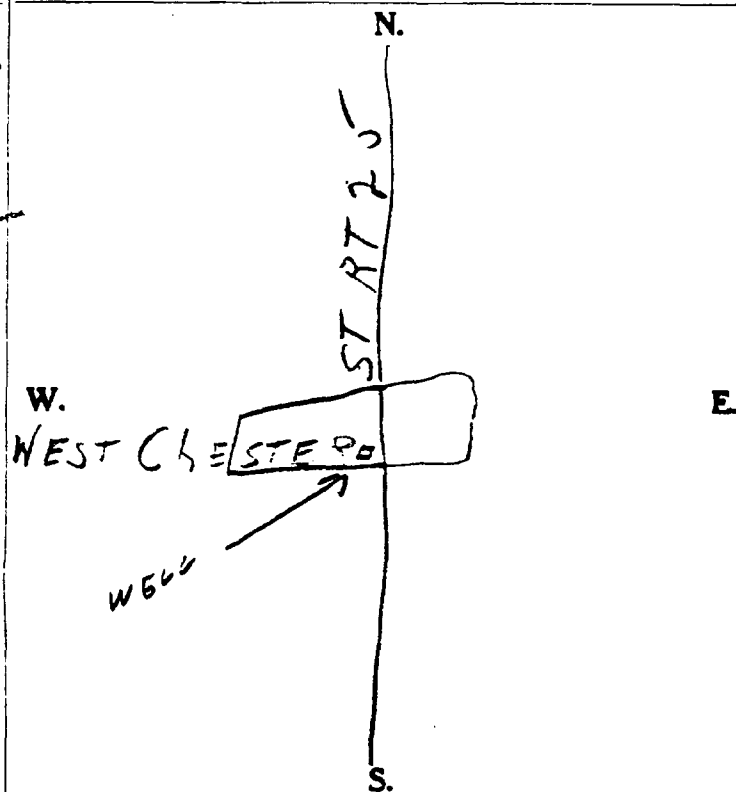
Pumping rate..... G.P.M. Duration of test..... hrs.
Drawdown..... ft. Date.....
Developed capacity.....
Static level—depth to water 38' ft.
Pump installed by.....

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
	0 Feet Ft.
CLAY		<u>35 1/2'</u>
LIMESTONE	<u>35 1/2'</u>	<u>104'</u>
WATER AT 38' AND AT 78"		

SKETCH SHOWING LOCATION

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm H.L. Woodrum
Address WEST CHESTER OHIO

Date 21 July 1953
Signature Harvey R. [illegible]

WELL LOG AND DRILLING REPORT

ORIGINAL

4635

X = 1,460,000
Y = 490,000 ± 3,000

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Columbus, Ohio

No 110165

County BUTLER Township UNION Section of Township 5X = 8
or Lot Number
Owner KENNETH JOSEPH Address RR#1 WEST CHESTER Ohio
Location of property IN WEST CHESTER

CONSTRUCTION DETAILS

Casing diameter 6 1/4 Length of casing 54'
Type of screen Length of screen
Type of pump
acity of pump
Depth of pump setting

PUMPING TEST

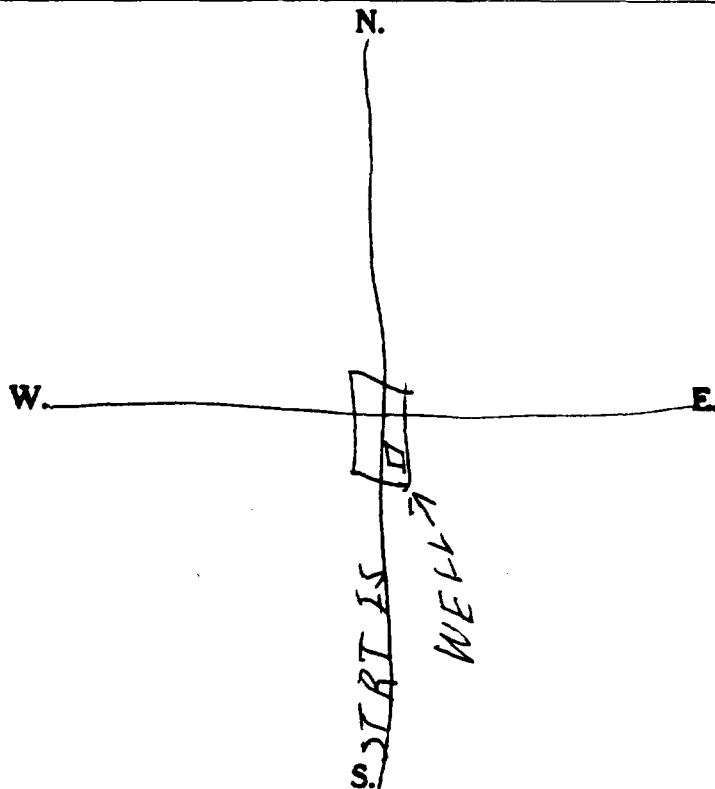
Pumping rate 1 G.P.M. Duration of test 1 hrs.
Drawdown 10' ft. Date
Developed capacity
Static level—depth to water 10' ft.
Pump installed by

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From 0 Feet	To Ft.
CLAY		5
CREEK GRAVEL	5	20
CLAY	20	45
CREEK GRAVEL	45	52
SANDSTONE (?)	52	54
4 Casing 2 feet out of ground.		

SKETCH SHOWING LOCATION

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm H.L. Woodrum
Address WEST CHESTER Ohio

Date 29 July 1953
Signed Harvey R. Woodrum

35
1953

WELL LOG AND DRILLING REPORT

ORIGINAL

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Columbus, Ohio

No 110178

County BUTLER Township UNION Section of Township or Lot Number 28
Owner LEE BALL Address WEST CHESTER OHIO
Location of property ST. RT. 251 IN WEST CHESTER

CONSTRUCTION DETAILS

Casing diameter 6" Length of casing 98 FT
Type of screen Length of screen
Type of pump
Capacity of pump
Depth of pump setting

PUMPING TEST

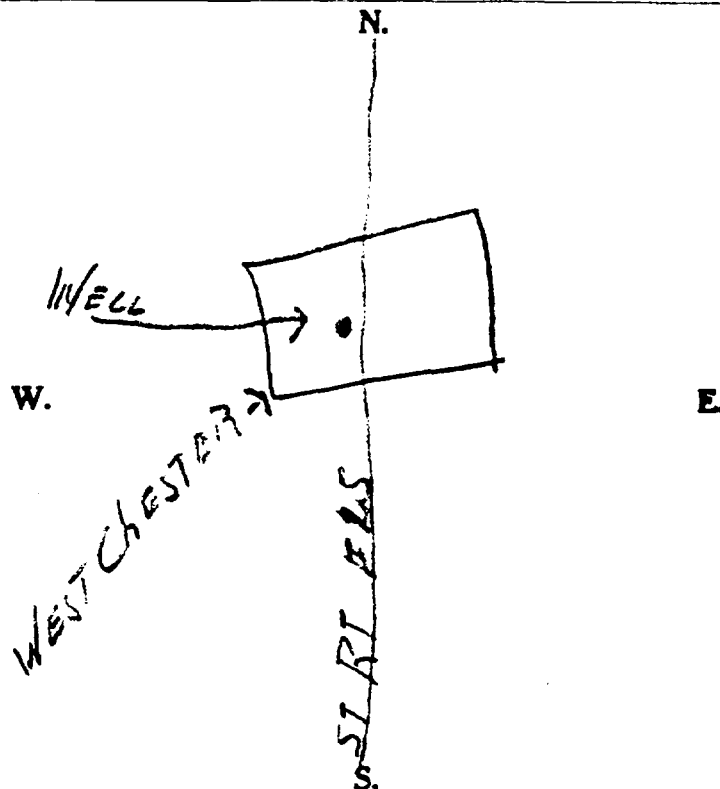
Pumping rate G.P.M. Duration of test hrs.
Drawdown ft. Date
Developed capacity
Static level—depth to water 110 ft.
Pump installed by

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From 0 Feet	To Ft.
CLAY		42
GRAVEL	42	80
CLAY	80	96
GREY SHALE	96	130
LIMESTONE	130	150
WATER BT 120 FT		

SKETCH SHOWING LOCATION

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm H. L. Woodrum
Address WEST CHESTER OHIO

Date 29 JAN 1954
Signed H. L. Woodrum

36

WELL LOG AND DRILLING REPORT

ORIGINAL

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Columbus, Ohio

Nº 110179

County BUTLER Township UNION Section of Township or Lot Number 28

Owner RONALD HERPER Address WEST CHESTER OHIO

Location of property ST. RT. #25 IN WEST CHESTER

CONSTRUCTION DETAILS

PUMPING TEST

Casing diameter 6" Length of casing 80
Type of screen Length of screen
Type of pump
Capacity of pump
Depth of pump setting

Pumping rate 1 G.P.M. Duration of test hrs.
Drawdown ft. Date
Developed capacity
Static level—depth to water 32 ft.
Pump installed by

WELL LOG

SKETCH SHOWING LOCATION

Formations
Sandstone, shale, limestone,
gravel and clay

From

To

0 Feet

Ft.

CLAY

40

~~SANDSTONE~~ GRAVEL 40

75

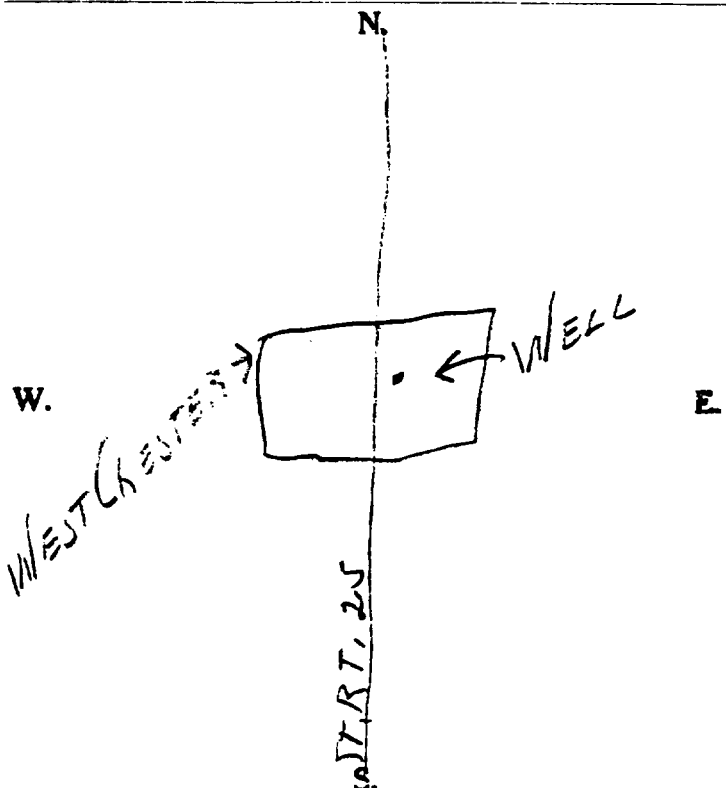
CLAY SHALE 5 75 90

WATER AT 40'

AND AT 82'

THIS WAS AN OLD
HAND DUG WELL
WE FILLED IT WITH
GRAVEL AND EARTH
OR CLAY

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm HILL WOODRUM
Address WEST CHESTER OHIO

Date 2-25-1954
Signed [Signature]

32

WELL LOG AND DRILLING REPORT

ORIGINAL

State of Ohio
DEPARTMENT OF NATURAL RESOURCESDivision of Water
Columbus, Ohio

No 110180

5438

County BUTLER Township ANION Section of Township
or Lot NumberOwner MRS JOSEPH Address WEST CHESTERLocation of property IN WEST CHESTER ON RT 25

CONSTRUCTION DETAILS

Casing diameter Length of casing

Type of screen Length of screen

Type of pump

Capacity of pump

Depth of pump setting

PUMPING TEST

Pumping rate G.P.M. Duration of test hrs.

Drawdown ft. Date

Developed capacity

Static level—depth to water 26 ft.

Pump installed by

WELL LOG

SKETCH SHOWING LOCATION

Formations
Sandstone, shale, limestone,
gravel and clay

From

To

0 Feet

..... Ft.

CLAY

10

GRAVEL

10

30

SHALE

30

42

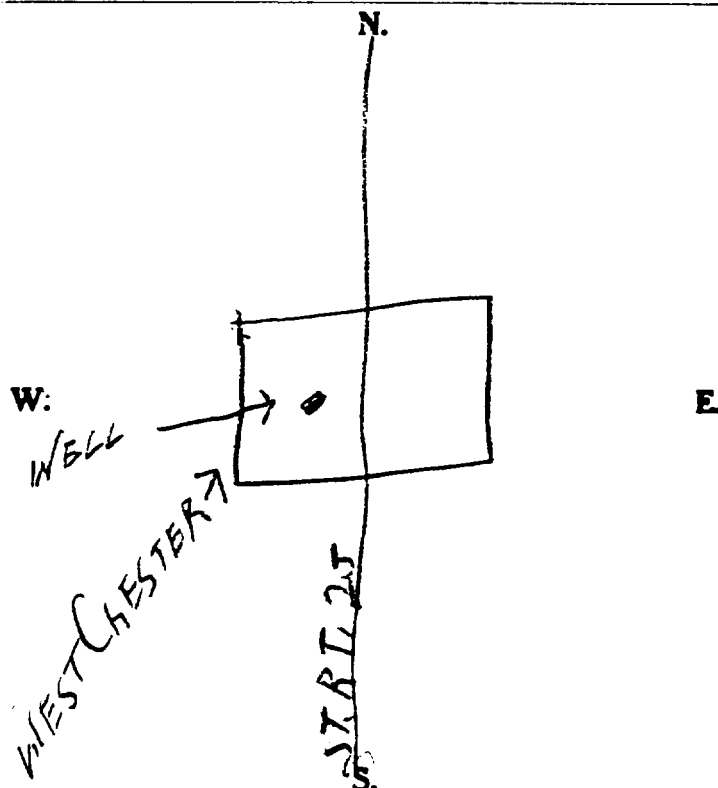
GRAVEL

42

50

3

WATER AT 42 FT

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.

See reverse side for instructions

Drilling Firm H. L. WOODRUMAddress WEST CHESTERDate 13-July-1954Signed H. L. Woodrum38
LOCATED

WELL LOG AND DRILLING REPORT

ORIGINAL

39

PLEASE USE PENCIL
OR TYPEWRITER.
DO NOT USE INK.

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
1562 W. First Avenue
Columbus, Ohio

No. 243420

County BUTLER Township UNION Section of Township 28
Owner PRESBYTERIAN CHURCH Address WEST CHESTER
Location of property E. SIDE OF 25 CENTER OF TOWN

CONSTRUCTION DETAILS

Casing diameter 6" Length of casing 59
Type of screen PC Length of screen 5'
Type of pump.....
Capacity of pump.....
Length of pump setting.....
Date of completion.....

BAILING OR PUMPING TEST

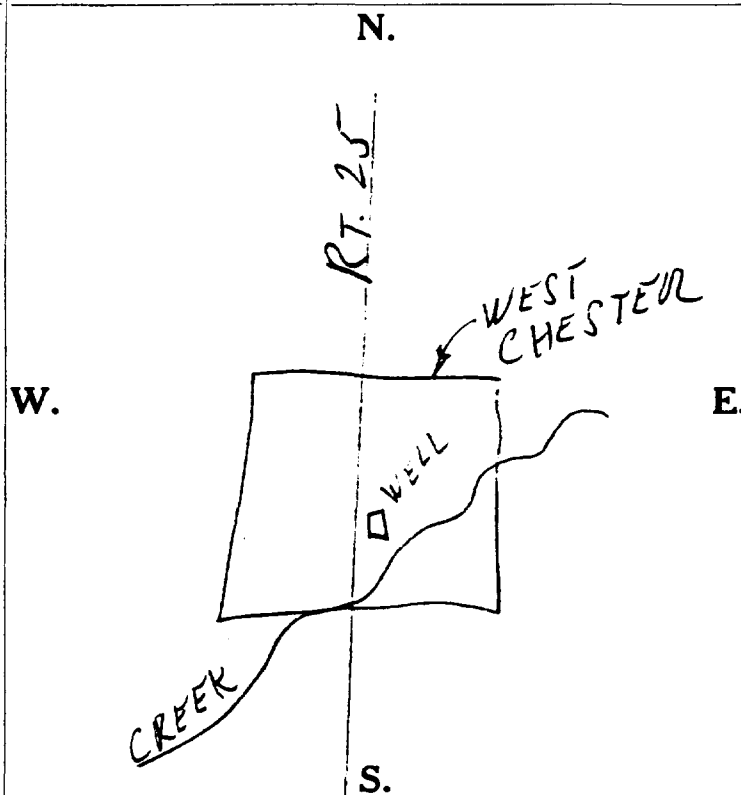
Pumping rate 15 G.P.M. Duration of test..... hrs.
Drawdown TOTAL ft. Date AUG - 60
Developed capacity.....
Static level—depth to water 10 ft.
Pump installed by.....

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From 0 Feet	ToFt.
<u>CLAY</u>	<u>0</u>	<u>18</u>
<u>SAND</u>	<u>18</u>	<u>22</u>
<u>CLAY</u>	<u>22</u>	<u>59</u>

SKETCH SHOWING LOCATION

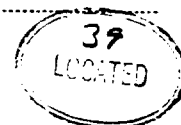
Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm BACH BROS
Address SOMERVILLE

Date AUG. 60
Signed Carl J. Bach



WELL LOG AND DRILLING REPORT

ORIGINAL

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
1500 Dublin Road
Columbus, Ohio

No. 220487

County Butler Township Union Section of Township 22
Owner Donald C. Medham Address Box 870 - Station Rd.
Location of property Station Road, West Chester, Pa.

CONSTRUCTION DETAILS		BAILING OR PUMPING TEST	
Casing diameter <u>6" O.D.</u>	Length of casing <u>20' gal.</u>	Pumping rate..... G.P.M.	Duration of test..... hrs.
Type of screen.....	Length of screen.....	Drawdown..... ft.	Date.....
Type of pump.....		Developed capacity <u>90 gal per hr.</u>	
Capacity of pump.....		Static level—depth to water <u>30'</u>	ft.
Depth of pump setting.....		Pump installed by.....	
Date of completion.....			

WELL LOG			SKETCH SHOWING LOCATION	
Formations Sandstone, shale, limestone, gravel and clay	From	To	Locate in reference to numbered State Highways, St. Intersections, County roads, etc.	
<u>Clay</u>	0 Feet	<u>20</u> Ft.	<div style="text-align: center;">N.</div> <div style="display: flex; justify-content: space-between; align-items: center;"> W. E. </div> <div style="text-align: center;">S.</div>	
<u>Rock</u>	<u>20</u>	<u>75 ft.</u>		
			See reverse side for instructions	

Drilling Firm V.L. Treadway Date May 13, 1959
Address 6710 Liberty - Fairfield Rd. Signed V.L. Treadway
Hamilton, Ohio.



WELL LOG AND DRILLING REPORT

ORIGINAL

X = 1,463,000
Y = 420,500

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Columbus, Ohio

No 119275

6746

County RUTLER Township UNION Section of Township or Lot Number 9 21
Owner WILLIAM WEST Address R.F. #1 WESTCHESTER
Location of property STATION RD WESTCHESTER OHIO

CONSTRUCTION DETAILS

PUMPING TEST

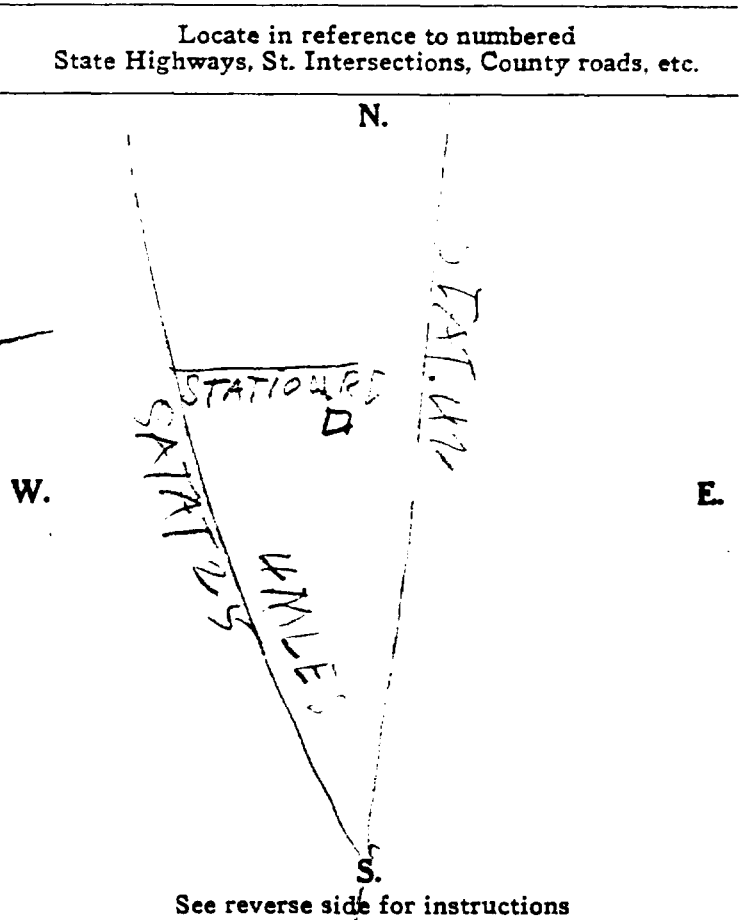
Casing diameter 6 Length of casing 26
Type of screen Length of screen
Type of pump
Capacity of pump
Depth of pump setting

Pumping rate 1 G.P.M. Duration of test hrs.
Drawdown ft. Date
Developed capacity
Static level—depth to water ft.
Pump installed by

WELL LOG

SKETCH SHOWING LOCATION

Formations Sandstone, shale, limestone, gravel and clay	From	To
	0 FeetFt.
CLAY	0	6
SHALE	6	58
WATER		



See reverse side for instructions

Drilling Firm VALLEYWELL DRILLING Date 7/29/53
Address 314 HOME AVE ALCOCKLAND Signed [Signature]

46
LOCATED

WELL LOG AND DRILLING REPORT

ORIGINAL

X = 1,461,500 ± 300
Y = 489,000 ± 300

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Columbus, Ohio

No 119276

66 42

County BUTLER ⁹ Township UNION ¹⁴ Section of Township or Lot Number 22
Owner C. R. SEARS Address RR-1 WESTCHESTER
Location of property STATION RD WESTCHESTER OHIO

CONSTRUCTION DETAILS

PUMPING TEST

Casing diameter 4 Length of casing 25
Type of screen Length of screen
Type of pump
Capacity of pump
Depth of pump setting

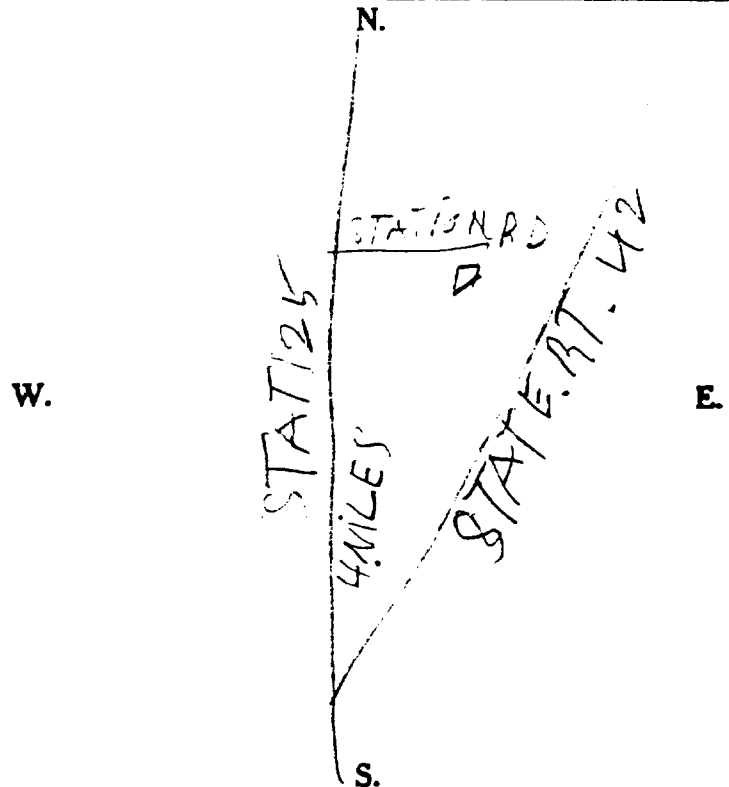
Pumping rate 1 G.P.M. Duration of test hrs.
Drawdown ft. Date
Developed capacity
Static level—depth to water ft.
Pump installed by

WELL LOG

SKETCH SHOWING LOCATION

Formations Sandstone, shale, limestone, gravel and clay	From	To
	0 Feet Ft.
CLAY	0	8
SHALE BLUE	8	100
5		
WATER T. 23		

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm VALLEY WELL DRILLING Date 8/3/54
Address 314 HOME AVE. CLEVELAND Signed [Signature]

42
LOCATED

WELL LOG AND DRILLING REPORT

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Columbus, Ohio

No. 95080

County Butler Township 14 Section of Township 28
or Lot Number
Owner Emmett Williams Address West Chester, O.
Location of property In West Chester, O.

CONSTRUCTION DETAILS

PUMPING TEST

Casing diameter 6" Length of casing 33-06 Pumping rate 30 G.P.M. Duration of test.....hrs.
Type of screen..... Length of screen..... Drawdown.....ft. Date.....
Type of pump..... Developed capacity.....
Capacity of pump..... Static level—depth to water 17 ft.
Depth of pump setting..... Pump installed by.....

WELL LOG

SKETCH SHOWING LOCATION

Formations Sandstone, shale, limestone, gravel and clay	From	To
Top soil	0 Feet	3 Ft.
Yellow clay	3	16
Sandy clay	16	20
Gravel & clay	20	31
Sand stone?	31	34

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.

N.

W.

E.

See reverse side for instructions

Drilling Firm O.O. Payne & Co.
Address Middletown, O.

Date Oct. 28 1952
Signed W.Y. Payne

